



CREPIDIUM MYOSOTIS, A NEW SPECIES OF ORCHIDACEAE FROM PAPUA NEW GUINEA.

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ABSTRACT: A species of *Crepidium* from Papua New Guinea, previously confused with *C. grandifolium*, is described as new. Forty three new combinations in *Crepidium* and six in *Dienia* are made for species in the western and south-west Pacific regions.

Microstylis grandifolia Schltr. (= *Malaxis grandifolia* (Schltr.) P.F. Hunt) was described from material collected at about 180 m. altitude in the primary forests of Kelel in Kaiser-Wilhelms-Land, Papua New Guinea (Schlechter 1911). Schlechter also recorded the species from near the Saugueti Base at an altitude of about 300 m, flowering in December 1908. Schlechter placed *M. grandifolia* in section *Pleiodon* which he distinguished as those species possessing "denticulations on the lateral lobes of the labellum". This group of species, along with those in Schlechter's sections *Pseudo-liparis*, *Oistochilus*, *Bothrocardia*, *Ophthalmodes*, *Hololobus*, *Herpetorhizis* and most in section *Commelinodes*, have since been transferred to the reinstated genus *Crepidium* (Szlachetko 1995). During the Schlechter-Lauterbach Commemorative Expedition, 1989-90 to Papua New Guinea, plants of *Malaxis grandifolia* (*Crepidium grandifolium*) (**Plate 8A**) were collected in the northern end of the Finisterre Range adjacent to the Lae-Madang road, and cultivated in the living collection at the Australian National Botanic Gardens, Canberra (Clements and Ziesing 1990).

When these plants flowered it became obvious that two sympatric species were included in the original collection. One of these was *C. grandifolium* and the other, a similar but undescribed species, is here described as new.

MATERIALS AND METHODS

The description of the new species was made from a range of sources including living plants, spirit-preserved specimens stored in BANG mix (65 % ethanol, 5 % glycerol and 30% water), floral dissection cards and 35 mm colour transparencies of flowers and plants. Specimens were examined from the following herbaria: B, BM, BRI, CANB, CBG, E, G, K, L, LINN, MEL, NSW, P, W and Z. Herbarium abbreviations follow Holmgren et al. (1990). Unless otherwise indicated, all types (or photographs thereof) and collections cited have been seen.

NEW SPECIES

Crepidium myosotis M.A.Clem. & D.L.Jones, *sp. nov.*

affinis *C. grandifolii* (Schltr.) Szlach. sed floribus longioribus, angustioribus, tepalis

majoribus (sepalo dorsali ad 7.5 x 2.5 mm; sepalis lateralibus ad 6.5 x 3 mm; petalis ad 7.5 x 1.3 mm); sepalis lateralibus late effusis, auriculiformibus labellum subtendentibus; labelli lobis anguste triangularibus, parallelis, auricularibus, c. 4 mm longis; et columna breviori comparate lata (ad 3.5 x 3 mm), differt.

TYPE: cultivated at Australian National Botanic Gardens, Australian Capital Territory, Canberra, 31 Jul. 1991, M.A. Clements (Holotype CANB; Isotype NCBG). PROVENANCE: plant originally collected in the Finnisterre Range, near old Yaula, Kofebi River crossing along the Madang-Lae Road, Madang Province, Papua New Guinea, 5° 33'S 145° 40'E, c. 500 m., 3 Apr. 1990, M.A. Clements 6354B & P.D. Ziesing.

Terrestrial **herb** forming loose clumps to c. 50 cm tall, consisting of 2-6 stems. **Stems** subcylindrical, 10-50 cm x 10-14 mm, consisting of 5-15 nodes, semi-erect to erect, straight or curved, narrowed slightly at the base, tapered suddenly near the apex, pale green, partially covered by scarious sheathing bracts. **Leaves** 6-10, semierect to spreading in a flabellate arrangement; **petiole** 2-5 cm x c. 6-10 mm, deeply canaliculate; **lamina** asymmetrically ovate to ovate-lanceolate, 5-20 cm x 2-6 cm, falcate, plicate, margins entire to slightly undulate, apex acute to acuminate. **Inflorescence** 15-40 cm long, erect, many-flowered; **peduncle** extremely short (c. 3-6 cm long), shallowly furrowed, with numerous sterile bracts; sterile bracts very narrowly subulate, 6-14 mm x c. 1.5 mm, the basal ones erect and crowded, the rest spreading or recurved, acute to acuminate; fertile bracts similar but smaller. **Pedicel plus ovary** 4-8 mm long, filiform, straight or curved, porrect to suberect. **Flowers** densely crowded, dark

red, 10-11 mm x 7-8 mm. **Dorsal sepal** oblong-spathulate, 6.5-7.5 mm x c. 2.5 mm, erect to recurved; margins strongly revolute; apex broadly obtuse. **Lateral sepals** oblong-obovate, 5.5-6.5 mm x 2.5-3 mm, strongly falcate, divergent, recurved behind the labellum; apex obtusely apiculate. **Petals** narrowly linear-obovate, 6.5-7.5 mm x c. 1.3 mm, spreading or recurved, divergent; margins strongly revolute, apex obtuse. **Labellum** hippocrepiform, 7-8 mm x c. 5.5 mm, at right angles to the rachis, with two erect, narrowly deltate, parallel, auricular lobes c. 4 mm long flanking the column; apical region with six, linear-subulate teeth to 2 mm long. **Column** porrect from the end of the ovary, c. 3.5 mm x c. 3 mm; column wings higher than the anther, obtuse to truncate. **Stigma** transversely ovate, c. 1.8 mm across, sunken. **Anther** ovate, c. 1 mm x c. 1.5 mm, purplish. **Pollinia** obovoid, c. 0.6 mm long, yellow, waxy. **Capsules** not seen. **Fig. 8 & Plate 8B & 9A.**

FLOWERING PERIOD: May-July in cultivation.

DISTRIBUTION: Madang Province, northern end of the Finnisterre Range.

HABITAT: Grows on sheltered southern slopes in leaf litter and volcanic ash over decomposed limestone and mudstone in tropical lowland rainforest. Altitude: c. 500 m.

RECOGNITION: *Crepidium myosotis* is characterised by the following combination of features; long, narrow flowers (to 11 mm x 8 mm); large tepals (dorsal sepal to 7.5 mm x 2.5 mm); lateral sepals to 6.5 mm x 3 mm; petals to 7.5 mm x 1.3 mm), oblong-obovate, widely divergent, subtending the labellum as ear-like structures; auricular labellum lobes, c. 4 mm long; narrowly deltate, parallel; and column relatively broad



and short (to 3.5 mm x 3 mm).

AFFINITIES: *Crepidium myosotis* is similar to *C. grandifolium* which has shorter broader flowers (to 7 mm x 6 mm), smaller tepals (dorsal sepal to 5 mm x 1.8 mm; lateral sepals to 4 mm x 2.5 mm; petals to 4.5 mm x 1 mm), oblong lateral sepals which hardly project beyond the labellum lamina, broadly deltate labellum lobes, and a relatively narrow column (to 2 mm x 1.5 mm).

CONSERVATION STATUS: Not known.

ETYMOLOGY: Derived from the Greek *myos*, mouse and *ous*, *otis*, ear, in reference to the lateral sepals which resemble a mouse's ears.

NEW COMBINATIONS

The majority of species formerly included in the genus *Malaxis* Sw. have recently been transferred to the reinstated genus *Crepidium* Blume, or transferred to newly described genera (Szlachetko 1995). This work, which is substantially supported by our studies, lacks a critical circumscription of *Malaxis sens. str.* and fails to nominate key generic characters for the genera involved. For example, the new genus *Fingardia* Szlach., based on *Microstylis nephroglossa* Schltr., is separated from *Crepidium* only by having a cordate labellum. We regard this as insufficient grounds for a new genus, and not all of the taxa transferred by Szlachetko have this character. As a result *Fingardia* is reduced to a synonym of *Crepidium*.

Szlachletcho (1995) also recognised *Gastroglottis* as a distinct genus, apparently being unaware of the earlier generic name *Dienia*.

Our studies into this complex group, based on living plants, original descriptions and types (including photographs and microfiche), show that a number of taxa in

the western and south-west Pacific region were overlooked by Szlachletcho. The necessary combinations for these taxa are made here, together with the correction of some nomenclatural and citational errors in Szlachletcho's paper.

Crepidium Blume, Bijdr. 8: 387, f. (1825). Type species: *Crepidium rhedii* Blume (note the spelling).

Synonym: *Pterochilus* Hook. & Arn., Bot. Beech. Voy. 71, t. 17 (1832). Type species: *Pterochilus plantaginea* Hook. & Arn.

Fingardia Szlach., Fragm. Fl. Geobot., Suppl. 3: 134 (1995). Type species: *Microstylis nephroglossa* Schltr., **syn. nov.**

Crepidium alagense (Ames) M.A. Clem. et D.L. Jones, **comb. nov.**

Basionym: *Microstylis alagensis* Ames, Phil. J. Sci., Bot. 2: 318 (1907); *Malaxis alagensis* (Ames) Ames, Orchid. 2: 122 (1908). Type: Philippines; Alag River, 5 Nov. 1906, E.D. Merrill 5801 (Holotype AMES!).

Synonym: *Fingardia alagensis* (Ames) Szlach., Fragm. Fl. Geobot., Suppl. 3: 134 (1995), **syn. nov.**

Distribution: Philippines.

Crepidium apollinis (P.F. Hunt) M.A. Clem. et D.L. Jones, **comb. nov.**

Basionym: *Microstylis heliophila* Schltr., Repert. Spec. Nov. Regni Veg., Beih. 1: 127-28 (1911) & Fig. Atlas t. 50, f. 171 (1928), non Rchb.f. (1881). Type: 'Kaiser-Wilhelms-Land: On more open clay slopes of the Dischore Range, in the vicinity of the Govidjoa Creek, alt. c. 1200 m.', June 1909, R. Schlechter 19732 (Holotype B†).

Synonym: *Malaxis apollinis* P.F. Hunt, Kew Bull. 24: 78 (1970), **nom.**

Crepidium heliophilum (Schltr.) Szlach., Fragm. Flor. Geobot., Suppl. 3: 127 (1995),

nom. illeg.

Distribution: Papua New Guinea.

Crepidium bataanense (Ames) M.A. Clem. et D.L. Jones, comb. nov.

Basionym: *Malaxis bataanensis* Ames, Phil. J. Sci., Bot. 6: 43 (1911). Type: Philippines; Luzon; Lamas Forest Reserve, Bataan Province, 17 Oct. 1906, F.W. Foxworthy 653 (Holotype AMES!).

Distribution: Philippines; Luzon.

Crepidium brevidentatum (C. Schweinf.) M.A. Clem. et D.L. Jones, comb. nov.

Basionym: *Malaxis brevidentata* C. Schweinf., Bishop Mus. Bull. 141: 20, f. 7a (1936). Type: Fiji, Vanua Levu, Mbua Province, on the southern slopes of Mt Seatura, alt. c. 500 m., 27 April 1934, A.C. Smith 1620 (Holotype AMES!; Isotypes BISH, K!, NY, P).

Synonym: *Oberonia brevidentata* C. Schweinf. ex B.E.V. Parham, Trans. & Proc. Fiji osc. 2: 27 (1953).

Distribution: Fiji.

Crepidium carrii (Seidenf. & J.J. Wood) M.A. Clem. et D.L. Jones, comb. nov.

Basionym: *Microstylis carrii* Seidenf. & J.J. Wood, Orch. Pen. Malaysia and Sing. 221, f. 93e (1992). Type: 'Malaya, Gunung Senyum, Pahang', C.E. Carr 228 (Holotype K, illust.!).

Synonym: *Fingardia carrii* (Seidenf. & J.J. Wood) Szlach., Fragm. Fl. Geobot., Suppl. 3: 134 (1995), **syn. nov.**

Distribution: Peninsular Malaya.

Crepidium comans (C. Schweinf.) M.A. Clem. et D.L. Jones, comb. nov.

Basionym: *Malaxis comans* C. Schweinf., Bishop Mus. Bull. 141: 21, f. 7b (1936). Type: Fiji, Vanua Levu, Mbua Province, in the lower Wainunu valley, 7 May 1934, A.C. Smith 1739 (Holotype AMES!).

Synonym: *Oberonia comans* C. Schweinf. ex B.E.V. Parham, Trans. & Proc. Fiji osc. 2: 27 (1953).

Distribution: Fiji.

Crepidium cordiglottis (J.J. Smith) M.A. Clem. et D.L. Jones, comb. nov.

Basionym: *Microstylis cordiglottis* J.J. Smith, Bull. Jard. Bot. Buitenzorg (ser. 3) 10: 34-35 (1928). Type: 'Sumatra: Padangsche Bovenlande; Laras Talang, Goenoeng Talang', alt. 1800 m., 28 Oct. 1981, H.A.B. Bünnemeijer 5224 (Holotype BO).

Synonym: *Fingardia cordiglottis* (J.J. Smith) Szlach., Fragm. Fl. Geobot., Suppl. 3: 134 (1995), **syn. nov.**

Note: Szlachetko's incorrectly cites the place of publication of this species as "8: 34 (1926)" the origin of which can be traced back to the abbreviated citation in Index Kewensis.

Distribution: Indonesia; Sumatra.

Crepidium epidendrum (Ames) M.A. Clem. et D.L. Jones, nom. nov.

Basionym: *Malaxis epiphytica* Ames, Sched. Orchid. No. 6., 34 (1923). Syntypes: Philippines; Mindonao, District of Cottabato, alt. 2700 ft., 27 Aug. 1911, C.A. Weberl 223 (Holotype AMES!).

Note: This is a separate species to that described earlier under the name *Microstylis epiphytica* Schltr. (= *Crepidium epiphyticum*). The new specific epithet was chosen to maintain reference to the habit of the species growing on tree trunks.

Distribution: Philippines; Mindonao.

Crepidium euanthum (Schltr.) M.A. Clem. et D.L. Jones, comb. nov.

Basionym: *Microstylis euantha* Schltr., Repert. Spec. Nov. Regni Veg. 16: 43-44 (1919). Type: Kaiser-Wilhelms-Land; inland from



Angriffshafen, A. Kempfer s.n. (Holotype B†).

Distribution: Papua New Guinea.

Crepidium floscularium (J.J. Smith) M.A. Clem. et D.L. Jones, *comb. nov.*

Basionym: *Microstylis floscularia* J.J. Smith, *Nova Guinea* 14: 362-63, t. 48, f. 21 (1932).
Syntypes: Dutch New Guinea; In the northern part, Mamberamo near Prauwenbivouac, 100-180 m., 29 Aug. 1920, H.J. Lam 940; s. loc., 6 Sept. 1920, H.J. Lam 1076; s. loc., 15 Sept. 1920, H.J. Lam 1215 & 1216; West of Doorman-river, 350 m., 23 Sept. 1920, H.J. Lam 1316 (BO).

Malaxis floscularia (J.J. Smith) P.F. Hunt, *Kew Bull.* 24: 80 (1970), *sphalm.* "floscularia".

Distribution: Indonesia; Irian Jaya.

Crepidium fulvum (Schltr.) M.A. Clem. et D.L. Jones, *comb. nov.*

Basionym: *Microstylis fulva* Schltr. in *Engl., Bot. Jahrb.* 58: 60 (1922); *Malaxis fulva* (Schltr.) P.F. Hunt, *Kew Bull.* 24: 80 (1970). Type: 'Nordöstl. Neu-Guinea: Im sumpfigen Uferwald am Leonhard-Schultze-Fluß (Sepik-Gebiet)', alt. c. 20-50 m., June 1912, C. Ledermann 7755 (Holotype B†).

Distribution: Papua New Guinea.

Crepidium glabrum (Kraenzl.) M.A. Clem. et D.L. Jones, *comb. nov.*

Basionym: *Goodyera glabra* Kraenzl., *Viert. Nat. Ges. Zurich* 74: 107 (1929). Type: New Caledonia, Ermitage, 19 June 1925, A.E. Däniker 2905 (Holotype Z!).

Distribution: New Caledonia.

Crepidium gracillimum M.A. Clem. et D.L. Jones, *nom. nov.*

Basionym: *Microstylis graciliscapa* Schltr., *Repert. Spec. Nov. Regni Veg.* 17: 107-8 (1919), *non* Ames & Schweinf. (1920). Type: Kaiser-Wilhelms-Land: On the border

between German and British New Guinea, A. Kempf s.n. (Holotype B†).

Distribution: Papua New Guinea.

Notes: Szlachetko (1995) made a new combination in *Crepidium* for *Malaxis graciliscapa* Ames & Schweinf. (*Orchidaceae* 6: 73-75, t. 88I (1920)) based on specimens collected at 'Borneo; Mount Kinabalu; Marei Perei Spur, Clemens 258, November 1915'. This taxon is distinct from *Microstylis graciliscapa* Schltr. and a new name is chosen here.

Crepidium imthurnii (Rolfe) M.A. Clem. et D.L. Jones, *comb. nov.*

Basionym: *Microstylis imthurnii* Rolfe, *Kew Bull.* 1921: 53 (1921); *Malaxis imthurnii* (Rolfe) L.O. Williams, *Bot. Mus. Leaflet* 5: 114 (1938). Type: Fiji; Veti Levu, Mba Province, at the foot of Mt Tomanivi nera Navai, 28 March 1906, E. im Thurn 208 (Holotype K!).

Synonym: *Microstylis everardii* Rolfe, *Kew Bull.* 1921: 54 (1921); *Malaxis everardii* (Rolfe) L.O. Williams, *Bot. Mus. Leaflet* 5: 114 (1938). Type: Fiji; Veti Levu, Mba Province, at the foot of Mt Tomanivi nera Navai, March 1906, E. im Thurn s.n. (Holotype K!).

Distribution: Fiji.

Crepidium kempfii (Schltr.) M.A. Clem. et D.L. Jones, *comb. nov.*

Basionym: *Microstylis kempfii* Schltr., *Repert. Spec. Nov. Regni Veg.* 16: 108 (1919). Type: Type: Kaiser-Wilhelms-Land: On the border between German and British New Guinea, A. Kempf s.n. (Holotype B†).

Distribution: Papua New Guinea.

Crepidium kobi (J.J. Smith) M.A. Clem. et D.L. Jones, *comb. nov.*

Basionym: *Microstylis kobi* J.J. Smith, *Orch.* *Java* 249-50, t. 183 (1905). Type: Java: Tengger bei Tosari oberhalb Pdookojo, alt. c.

2000 m., J.D. Kobus s.n. (Holotype BO).

Synonym: *Fingardia kobi* (J.J. Smith) Szlach., *Fragm. Fl. Geobot.*, Suppl. 3: 134 (1995), **syn. nov.**

Distribution: Indonesia; Java.

Crepidium lamii (J.J. Smith) M.A. Clem. et D.L. Jones, *comb. nov.*

Basionym: *Microstylis lamii* J.J. Smith, *Nova Guinea* 14: 361-62, t. 48, f. 20 (1932); *Malaxis lamii* (J.J. Smith) P.F. Hunt, *Kew Bull.* 24: 81 (1970). Type: Dutch New Guinea; In the northern part, Mamberamo, 20 m., 4 July 1920, H.J. Lam 545 (Holotype BO, *illustr.!*).

Distribution: Indonesia; Irian Jaya.

Crepidium latilabrum (Schltr.) M.A. Clem. et D.L. Jones, *comb. nov.*

Basionym: *Microstylis latilabris* Schltr., *Repert. Spec. Nov. Regni Veg.*, Beih. 1: 140-41 (1911) & *Fig. Atlas* t. 55, f. 192 (1928); *Malaxis latilabris* (Schltr.) P.F. Hunt, *Kew Bull.* 24: 81 (1970). Type: Kaiser-Wilhelms-Land: In humus in the primary forest near Wobbe, alt. c. 200 m., July 1907, R. Schlechter 16273 (Holotype B†).

Synonym: *Fingardia latilabris* (Schltr.) Szlach., *Fragm. Fl. Geobot.*, Suppl. 3: 134 (1995), **syn. nov.**

Distribution: Papua New Guinea.

Crepidium latisegmentum (C. Schweinf.) M.A. Clem. et D.L. Jones, *comb. nov.*

Basionym: *Malaxis latisegmenta* C. Schweinf., *Bishop Mus. Bull.* 141: 22, f. 7c (1936). Type: Fiji, on the eastern slope of the main ridge of Koro, 29 Jan. 1934, A.C. Smith 976 (Holotype AMES!).

Synonym: *Oberonia latisegmenta* C. Schweinf. ex B.E.V. Parham, *Trans. & Proc. Fiji Soc.* 2: 27 (1953).

Distribution: Fiji.

Crepidium latisepalum (C. Schweinf.) M.A. Clem. et D.L. Jones, *comb. nov.*

Basionym: *Microstylis latisepala* Rolfe, *Kew Bull.* 1921: 53 (1921); *Malaxis latisepala* (Rolfe) C. Schweinf., *Bishop Mus. Bull.* 141: 23 (1936). Type: Fiji; Veti Levu, Mba Province, at the foot of Mt Tomanivi near Navai, 28 March 1906, E. im Thurn 209 (Holotype K!; Isolotype AMES!).

Synonym: *Oberonia latisegmenta* C. Schweinf. ex B.E.V. Parham, *Trans. & Proc. Fiji Soc.* 2: 27 (1953).

Distribution: Fiji.

Crepidium lilacinum (Ames) M.A. Clem. et D.L. Jones, *comb. nov.*

Basionym: *Malaxis lilacina* Ames, *Sched. Orchid.* No. 6., 35 (1923). Syntypes: Philippines; Leyte Jori, alt. c. 600 m., 12 Nov. 1914, C.A. Wenzel 641 (AMES!); s. loc., 15 Nov. 1914, C.A. Wenzel 667; Anitgue Province, Panay, 20 June 1918, R.C. McGregor 6205 (AMES!).

Distribution: Philippines; Leyte and Panay Islands.

Crepidium lokonense (Schltr.) M.A. Clem. et D.L. Jones, *comb. nov.*

Basionym: *Microstylis lokonensis* Schltr., *Repert. Spec. Nov. Regni Veg.* 10: 30-31 (1911). Type: 'Celebes: im Humus der Wälder auf dem Guong Lokon (Minahassa)', alt. c. 1000 m., Nov. 1909, R. Schlechter 20445 (Holotype B†).

Synonym: *Fingardia lokonensis* (Schltr.) Szlach., *Fragm. Fl. Geobot.*, Suppl. 3: 134 (1995), **syn. nov.**

Distribution: Papua New Guinea.

Crepidium longifolium (Rolfe) M.A. Clem. et D.L. Jones, *comb. nov.*

Basionym: *Microstylis longifolia* Rolfe, *Kew Bull.* 1921: 54 (1921); *Malaxis longifolia*



(Rolfe) L.O. Williams, Bot. Mus. Leaflet. 5: 115 (1938). Type: Fiji, Jan. 1878, Horne s.n. (Holotype K!).

Distribution: Fiji.

Crepidium lunatum (Schltr.) M.A. Clem. et D.L. Jones, *comb. nov.*

Basionym: *Microstylis lunata* Schltr., Repert. Spec. Nov. Regni Veg. 9: 162 (1910); *Malaxis lunata* (Schltr.) Ames, Arnold Arb. 13: 129 (1932), in obs. Type: New Hebrides, Aneityum, 6 July 1896, Morrison s.n. (Holotype B†).

Synonym: *Fingardia lunata* (Schltr.) Szlach., Fragm. Fl. Geobot., Suppl. 3: 134 (1995), *syn. nov.*

Note: Szlachetko (1995) incorrectly cites the place of publication of this species as 'Repert. Spec. Nov. Regni Veg. 4: 162 (1911)'.

Distribution: Vanuatu.

Crepidium macgregorii (Ames) M.A. Clem. et D.L. Jones, *comb. nov.*

Basionym: *Malaxis macgregorii* Ames, Phil. J. Sci., Bot. 6: 45 (1911). Type: Philippines: Polillo Island, Oct.-Nov. 1909, R.C. McGregor s.n. (Holotype AMES!).

Synonym: *Malaxis longipedunculata* Ames, Phil. J. Sci., Bot. 8: 411 (1914). Type: Philippines; Leyte Island, 29 Nov. 1912, C.A. Wenzel 52 (Holotype AMES!).

Distribution: Philippines; Polillo Island and Leyte Island.

Crepidium mindorense (Ames) M.A. Clem. et D.L. Jones, *comb. nov.*

Basionym: *Microstylis mindorensis* Rendle, J. Bot. 34: 357 (1896). Type: Philippines; Mindoro Is., Mt. Dulangau, alt. c. 5000 ft., J. Whitehead s.n. (Holotype BM, illust. AMES!).

Distribution: Philippines; Mindoro.

Crepidium mindaenaense (Ames) M.A.

Clem. et D.L. Jones, *comb. nov.*

Basionym: *Malaxis mindaenaensis* Ames, Phil. J. Sci., Bot. 6: 43 (1911). Type: Philippines; Island of Mindanao, Sept. 1909, A.D.E. Elmer 11855 (Holotype AMES!).

Distribution: Philippines; Mindanao.

Crepidium negrosianum (Ames) M.A. Clem. et D.L. Jones, *comb. nov.*

Basionym: *Malaxis negrosiana* Ames in Elmer, Leaflet. Philipp. Bot. 5: 1561 (1912). Type: Philippines: Island of Negros, Mar. 1908, A.D.E. Elmer 9600 (Holotype AMES!).

Distribution: Philippines; Negros.

Crepidium neoebudicum (Ames) M.A. Clem. et D.L. Jones, *nom. nov.*

Basionym: *Malaxis neo-ebudica* Ames, J. Arn. Arb. 13: 128 (1932). Type: New Hebrides; Tanna, Lenakel, alt. c. 100 m., 8 Mar. 1921, S.F. Kajewski 137 (Holotype AMES!).

[*Malaxis xanthochila* auct. non (Schltr.) Ames & C. Schweinf.; B. Lewis & P.J. Cribb, Orch. Vanuatu 71, f. 11B (1989)]

Distribution: Vanuatu.

Crepidium nephroglossum (Schltr.) M.A. Clem. et D.L. Jones, *comb. nov.*

Basionym: *Microstylis nephroglossa* Schltr., Repert. Spec. Nov. Regni Veg., Beih. 1: 140 (1911) 7 fig. Atlas t. 55, f. 191 (1928). Type: Kaiser-Wilhelms-Land: In humus in the forests of the Kani Range, alt. c. 1000 m., May 1908, R. Schlechter 17742 (Holotype B†).

Synonym: *Fingardia nephroglossa* (Schltr.) Szlach., Fragm. Fl. Geobot., Suppl. 3: 134 (1995), *syn. nov.*

Distribution: Papua New Guinea.

Crepidium ophrydis (Koen.) M.A. Clem. et D.L. Jones, *comb. nov.*

Basionym: *Epidendrum ophrydis* Koen. in Retz., Obs. Bot. 6: 46 (1791). Type: Thailand,

[Phuket area?], J.G. Koenig s.n. (Lectotype LHS specimen labelled type K!, here designated)

Synonym: *Malaxis ophrydis* (Koen.) Ormerod in Seidenf., Desc. Epid. Köning 1791, 18 (1995), **syn. nov.**

Notes: The type sheet at Kew, labelled *Epidendrum terrestre*, which is part of the Rottlerianum Herbarium, presented to Kew by the Council of King's College, Feb. 1872, contains two specimens representing two separate species. A lectotype was chosen from these specimens to match the protologue and, fortuitously it also preserves the application of the specific epithet 'latifolia' for the species widely known as *Malaxis latifolia* (see below under *Dienia*).

Distribution: Peninsular Malaya.

Crepidium petiolaris (Schltr.) M.A. Clem. et D.L. Jones, **comb. nov.**

Basionym: *Microstylis petiolaris* Schltr. in Engl., Bot. Jahrb. 58: 61 (1922); *Malaxis petiolaris* (Rchb.f.) P.F. Hunt, Kew Bull. 24: 83 (1970). Type: 'Nordöstl. Neu-Guinea: Im sumpfigen Uferwald am Frieda-FluB (Sepik-Gebiet)', alt. c. 20-40 m., June 1912, C. Ledermann 7447 (Holotype B†).

Distribution: Papua New Guinea.

Crepidium plantagineum (Hook. & Arn.) M.A. Clem. et D.L. Jones, **comb. nov.**

Basionym: *Pterochilus plantaginea* Hook. & Arn., Bot. Beech. Voy. 71, t. 17 (1832); *Microstylis plantaginea* (Hook. & Arn.) Steud., Nomencl. bot. (ed. 2) 2: 144 (1840). Type: Society Islands, 1826, Lay? (Holotype K!, illust.!).

Distribution: Tahiti.

Crepidium platytilum (Rchb.f.) M.A. Clem. et D.L. Jones, **comb. nov.**

Basionym: *Microstylis platytila* Rchb.f. in Seem., Fl. Vit. 302 (1868). Type:

[Somosomo], Seeman 590 (Holotype W!; Isolotypes AMES!, BM, K!, P).

Synonym: *Microstylis rheedii* auct., non Lindl.; Seem., Bonplandia 9: 260 (1861).

Distribution: Fiji.

Crepidium polyphyllum (Ridley) M.A. Clem. et D.L. Jones, **comb. nov.**

Basionym: *Microstylis polyphylla* Ridley, J. Linn. Soc. 24: 339 (1888). Type: New Caledonia, Viellard 374 (Holotype BM, lost).

Notes: Despite not being able to locate the type, the description is sufficiently concise, especially in relation to the details of the labellum (side-lobes are short, rounded and obtuse and the mid-lobe is longer, elliptical and obtuse, the auricles broad and obtuse), to differentiate this species from any other from New Caledonia.

Distribution: New Caledonia.

Crepidium purpureiflorum (Ames) M.A. Clem. et D.L. Jones, **comb. nov.**

Basionym: *Malaxis purpureiflorum* Ames & Quisumb, Phil. J. Sci., Bot. 59: 2 (1936). Type: Philippines; near old Nagilian trail, Mt. Province, May 1934, K.B. Day 16 (Holotype AMES!).

Distribution: Philippines.

Crepidium radicolium (Rolfe) M.A. Clem. et D.L. Jones, **comb. nov.**

Basionym: *Microstylis radicola* Rolfe, Kew Bull. 1921: 54 (1921); *Malaxis radicola* (Rolfe) L.O. Williams, Bot. Mus. Leaflet 5: 115 (1938). Type: 'Fiji: Nandarivatu, on mossy tree roots above ground in shady forest', 1 Feb. 1906, E. im Thurn 64 (Holotype K!).

Distribution: Fiji.

Crepidium reineckeanum (Kraenzl.) M.A. Clem. et D.L. Jones, **comb. nov.**

Basionym: *Microstylis reineckeanum* Kraenzl. in



Engl., Bot. Jahrb. 25: 600 (1898). Syntypes: Samoa; Upolu, Letogo-Flussgebiet, Apr. 1894, F. Reinecke 311 (B†); Tutuila, Matafao-Kamm, Dec. 1894, F. Reinecke 620 (B†).

Distribution: Samoa.

Crepidium rhedii Blume, Bijdr. 8: 387, f. (1825). Type:

Synonym: *Microstylis blumei* Boerlage et J.J. Smith, Icon. Bogor. 2: t. 108, f. B (1903); *Malaxis blumei* (Boerlage et J.J. Smith) Bakh.f., Blumea 12: 68 (1963). Type: cult. ex Buitenzorg (Holotype BO).

Synonym: *Crepidium blumei* (Boerlage et J.J. Smith) Szlach., Fragm. Flor. Geobot., Suppl. 3: 124 (1995), *syn. nov.*

Notes: Szlachetko was apparently unaware that *Microstylis blumei* was described as an alternative name that could be used for *Crepidium rhedii* Blume. The combination *Crepidium blumei* is therefore superfluous since it is based on a later description of the species which is the type of the genus *Crepidium*.

Since the original spelling of the specific epithet was "rhedii" this should be adhered to in preference to "rheedii". Both names are alternative spellings that honour the Dutch colonial administrator and botanist, Hendrik A. van Rheede tot Draakestein (1637-1691), governor of Malabar and head representative of the East Indian Company in India (Stafleu and Cowan 1983).

Distribution: Indonesia; Java.

Crepidium ridleyanum (P.F. Hunt) M.A. Clem. et D.L. Jones, *comb. nov.*

Basionym: *Microstylis acuminata* Ridley, Trans. Linn. Soc. Bot. 9: 159 (1916), non D. Don (1825). Type: Dutch New Guinea; Camp VIa, on the western bank of the Tsingarong on route to Mt Carstensz, alt. 3100 ft., 1912, A.F.R. Wallatton et al. (Holotype BM!).

Malaxis ridleyana P.F. Hunt, Kew Bull. 24: 84 (1970), *nom.*

Distribution: Indonesia; Irian Jaya.

Crepidium rizalense (Ames) M.A. Clem. et D.L. Jones, *comb. nov.*

Basionym: *Malaxis rizalensis* Ames, Phil. J. Sci., Bot. 6: 46 (1911). Type: Philippines; Luzon; Rizal Province, Bosoboso, Aug. 1907, M. Ramos (Holotype AMES!).

Distribution: Philippines; Luzon.

Crepidium schlechteri (Rolfe) M.A. Clem. et D.L. Jones, *comb. nov.*

Basionym: *Microstylis vitiensis* Schltr., Repert. Spec. Nov. Regni Veg. 10: 249 (1911), *nom. illeg., non* (Rolfe 1909). Type: Viti Levu, upper Rewa River, 1884, Dr. Lucae s.n. (Holotype B†).

Microstylis schlechteri Rolfe, Kew Bull. 1921: 53 (1921), *nom.*

Distribution: Fiji.

Crepidium segaarense (Kraenzl.) M.A. Clem. et D.L. Jones, *comb. nov.*

Basionym: *Microstylis segaarenensis* Kraenzl. in Engl., Bot. Jahrb. 7: 435-6 (1886). Type: New Guinea, Mc Cluer Bay, in montane forests, 18 June 1875, Naumann (Holotype B†).

Distribution: Papua New Guinea.

Crepidium tenggerense (J.J. Smith) M.A. Clem. et D.L. Jones, *comb. nov.*

Basionym: *Microstylis tenggerensis* J.J. Smith, Bull. Dep. Agric. Ind. Neerl. 43: 28-30 (1910). Type: 'Java: Tengger bei Nogko djadjar', M. Buysman s.n. (Holotype BO).

Synonym: *Fingardia tenggerensis* (J.J. Smith) Szlach., Fragm. Fl. Geobot., Suppl. 3: 134 (1995), *syn. nov.*

Distribution: Indonesia.

Crepidium tetralobum (Schltr.) M.A. Clem. et D.L. Jones, *comb. nov.*

Basionym: *Microstylis tetraloba* Schltr., Repert. Spec. Nov. Regni Veg. 9: 94 (1910). Type: Samoa; Upolu, Betche s.n. (Holotype B†).

Synonym: *Microstylis radiculicola* Rolfe, Kew Bull. 1921: 54 (1921), pro. parte. (fide Kores 1991).

Distribution: Samoa.

Crepidium uncatum (Ames) M.A. Clem. et D.L. Jones, comb. nov.

Basionym: *Malaxis uncata* Ames, Phil. J. Sci., Bot. 6: 46 (1911). Type: Philippines; Laguna, Tayabas Province, Paete Piapi, Mar. 1908, H.M. Curran 9552 (Holotype AMES!).

Distribution: Philippines.

Crepidium vitiense (Rolfe) M.A. Clem. et D.L. Jones, comb. nov.

Basionym: *Microstylis vitiense* Rolfe, J. Linn. Soc. Bot. 39: 173 (1909), non Schltr. (1911). Type: Fiji; "Col i Nandarivatu", Sept. 1907, Gibbs 653 (Holotype BM!; Isolotype K!).

Distribution: Fiji.

Dienia Lindl. in Edwards's, Bot. Reg. 10: sub t. 825 (1824). Type species: ***Dienia congesta*** Lindl.

Synonyms: *Gastroglottis* Blume, Bijdr. 8: 397 (1825). Type species: *Gastroglottis montana* Blume.

Anaphora Gagnep., Bull. Mus. Hist. Nat. (Paris) 2 (ser. 4): 592 (1929). Type species: *Anaphora liparioides* Gagnep.

Dienia benquetense (Ames) M.A. Clem. et D.L. Jones, comb. nov.

Basionym: *Malaxis benquetensis* Ames, Phil. J. Sci., Bot. 6: 43-44 (1911). Type: Philippines: Luzon, Benquet Subprovince, Pauai, c. 2100 m, June 1909, R.C. McGregor s.n. (Holotype AMES!).

Distribution: Philippines; Luzon.

Dienia curranii (Ames) M.A. Clem. et D.L. Jones, comb. nov.

Basionym: *Malaxis curranii* Ames, Phil. J. Sci., Bot. 6: 44 (1911). Type: Philippines: Luzon, Benquet Subprovince, 16 Aug. 1906, H.M. Curran s.n. (Holotype AMES!).

Distribution: Philippines, Luzon.

Dienia latifolia (Smith) M.A. Clem. et D.L. Jones, comb. nov.

Basionym: *Malaxis latifolia* Smith in Rees, Cyclop. 22: sub *Malaxis* n. 3 (1812). Type: 'Upper Nepal', 1806, Buchanan in herb. J.E. Smith 1396.3 (Holotype LINN!).

(for a list of synonyms see Clements 1989).

Distribution: Southern Asia.

Dienia montana (Smith) M.A. Clem. et D.L. Jones, comb. nov. (**Plate 9B**).

Basionym: *Gastroglottis montana* Blume, Bijdr. 6: t. 2; 9. 397 (1825). Type: Java, C. Blume s.n. (Holotype L!).

Synonyms: *Microstylis bernaysii* F. Muell., Fragm. 11: 21 (1878); *Liparis bernaysii* (F. Muell.) Bailey, Syn. Queensl. fl. 508 (1883). Type: 'In montibus pone Trinity-Bay ad truncos arborem emortuos', 1878, F.M. Bailey s.n. (Holotype MEL!).

Distribution: Indonesia, New Guinea and Australia.

Dienia truncicola (Schltr.) M.A. Clem. et D.L. Jones, comb. nov.

Basionym: *Microstylis truncicola* Schltr., Repert. Spec. Nov. Regni Veg. 10: 30-31 (1911). Type: 'Celebes: An Baumstämmen, c. 1+-2 Fuss über dem Boden, auf dem Guong Masarang (Minahassa)', alt. c. 1200 m., Nov. 1909, R. Schlechter 20478 (Holotype B†).

Synonym: *Crepidium truncicola* (Schltr.) Szlach., Fragm. Fl. Geobot., Suppl. 3: 133 (1995), **syn. nov.**



Note: Schlechter in describing the species compares it to both *Microstylis latifolia* and *M. congesta*.

Distribution: Indonesia; Sulawesi.

Dienia volkensis (Schltr.) M.A. Clem. et D.L. Jones, *comb. nov.*

Basionym: *Microstylis volkensis* Schltr. in Engl., Bot. Jahr. 56: 458 (1921). Syntypes: 'Palau-Inseln: im dichten Mittelhochwald bei Ngatkip, auf Babelthaob', alt. c. 100 m., Mar. 1914, C. Ledermann 14571 (B†); 'Korolinen: In einer feuchten Senkung mit schattigem Gehölzbusch, im Distrikt Mashabal, auf der Insel Yap', alt. 150 m., Dec. 1899, G. Volkens 174 (B†).

Distribution: Palau and Caroline Islands.

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LITERATURE CITED

Clements, M.A. and P.D. Ziesing (1990). Report on the Results of the Schlechter-Lauterbach Commemorative, Expedition_1989-1990: Studies in the Phylogeny of the Australasian Orchidaceae. Occasional publication 11, Australian National Botanic Gardens, Canberra.

Holmgren, P.K., Holmgren, N.H. and L.C. Barnett (1990). *Index Herbariorum, Part I: The Herbaria of the World* (Eighth edit.). New York Botanic Gardens, New York

Schlechter, R. (1911). Die Orchidaceen von Deutch-Neu-Guinea. *Repert. Spec. Nov. Regni Veg., Beih.* 1: 1-1079.

Stafleu, F.A. and R.A. Cowan (1983). *Taxonomic literature* Vol. IV: P-Sak. W. Junk, The Hague.

Szlachetko, D.L. (1995). *Systema Orchidarium. Fragm. Flor. Geobot. Suppl.* 3: 1-152.

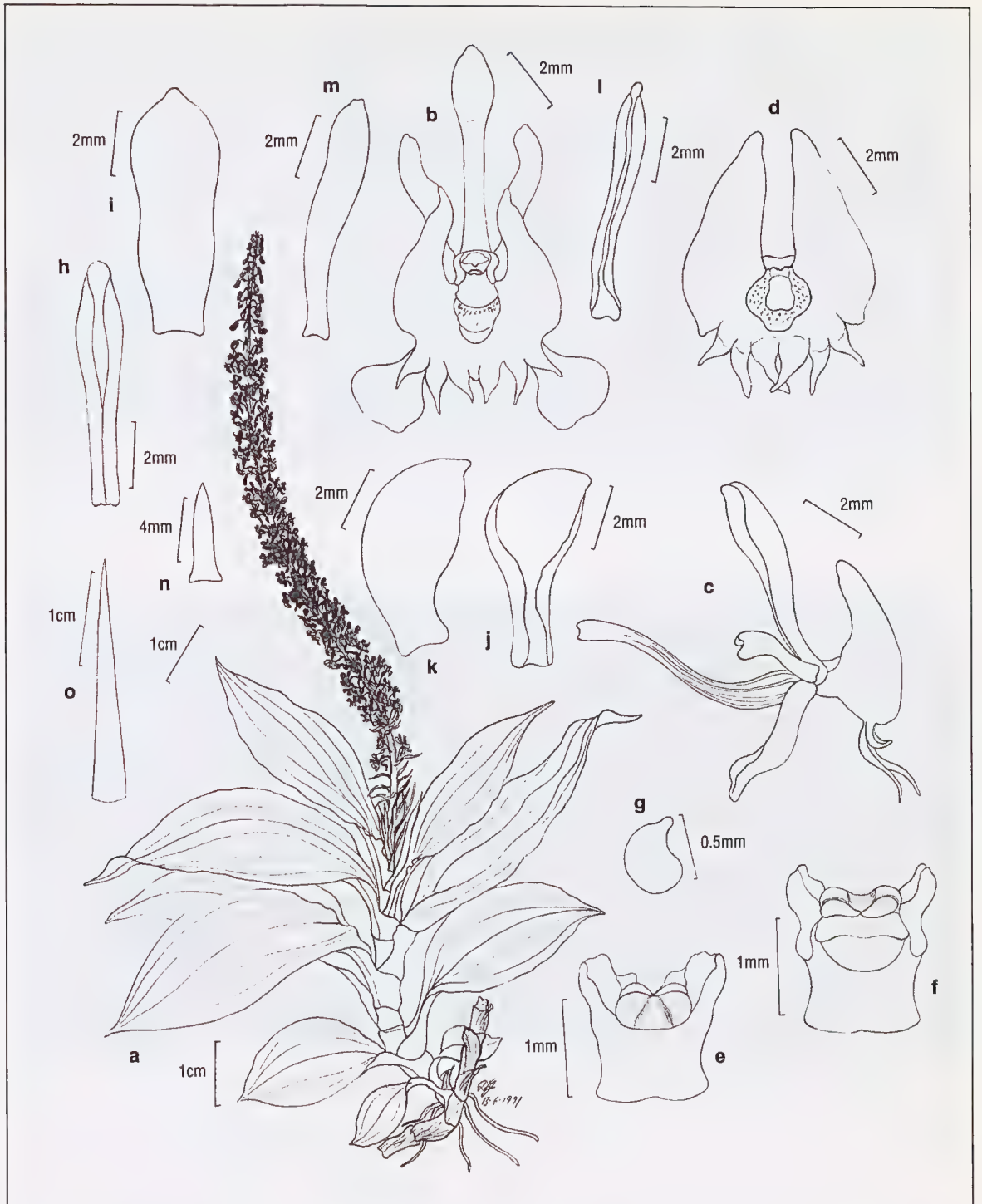


Figure 8. *Crepidium myosotis*, Madang Province; Finnisterre Range, Papua New Guinea, Clements 6354B: **a.** plant: **b.** flower from front: **c.** flower from side: **d.** labellum flattened: **e.** column from back: **f.** column from front: **g.** pollinaria: **h.** dorsal sepal: **i.** dorsal sepal flattened: **j.** lateral sepal: **k.** lateral sepal flattened: **l.** petal: **m.** petal flattened: **n.** floral bract: **o.** sterile bract.



Plate 8A. Flowers of *Crepidium grandifolium*, Clements 6354A.



Plate 8B. Part of inflorescence of *Crepidium myosotis*, Clements 6354B



Plate 9A. Flowers of *Crepidium myosotis*, Clements
7259.



Plate 9B. *Dienia montana*, near Darwin,
Northern Territory, Australia.

